

REMARKS

Claims 27-41 and 44-45 are pending in this application. By this Amendment, independent claim 27 is amended for clarity and to recite: that the battery has a storage capacity of a plurality of hypothetical energy units; a power supply control device; storing a cost of generation for each unit of charge stored in the battery; determining an amount of power that needs to be supplied; determining a current cost of the charge stored in the battery; and determining quotas for power distribution of the power supplies and the battery. Support for the amendments can be found, for example, at page 6, lines 7-13 (power supply control device); page 20, lines 9-11 (storing the cost of generation of each unit of charge stored in the battery); Fig. 6 (hypothetical energy units); Fig. 3, step 1004 (determining the amount of power required); page 20, lines 18-20 (determining the current cost of the battery); and page 17, lines 3-8 (determining power distribution quotas) of the specification as filed. Claim 28 is amended to be consistent with amended claim 27. No new matter is added.

Applicants appreciate the courtesies shown to Applicants' representative by Examiners Borissov and Clark in the August 11, 2009 personal interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

I. The Claims Are Patentable Over The Applied References

The Office Action (1) rejects claims 27-37 and 45 under 35 U.S.C. §103(a) over U.S. Patent Application Publication No. 2004/0074682 to Fussey et al. (Fussey) in view of U.S. Patent No. 5,349,535 to Gupta; (2) rejects claim 38 under 35 U.S.C. §103(a) over Fussey in view of Gupta, and further in view of U.S. Patent No. 6,554,088 to Severinsky et al. (Severinsky); (3) rejects claims 39-41 under 35 U.S.C. §103(a) over Fussey in view of Gupta, and further in view of U.S. Patent No. 6,201,312 to Shioiri et al. (Shioiri); and (4) rejects claim 44 under 35 U.S.C. §103(a) over Fussey in view of Gupta, and further in view of U.S.

Patent Application Publication No. 2003/0072984 to Saloka et al. (Saloka). Applicants respectfully traverse the rejections.

Regarding independent claim 27, the applied references fail to disclose each and every feature because (A) it would not have been obvious to modify Fussey by Gupta; and (B), even if the references are combined, the proposed combination fails to result in each and every feature of independent claim 27.

The Office Action cites to Fussey and alleges that: (a) paragraphs [0010], [0006], [0012], [0032] and [0039] and Fig. 2 disclose obtaining information on the power generation costs of multiple power sources; and (b) that paragraphs [0029]-[0031], [0038]-[0039], [0042]-[0043] and [0050] disclose adjusting the power supply distribution so that the power supply from the power source having the lowest power generation cost is prioritized. The Office Action acknowledges that Fussey fails to disclose using charge and discharge histories of a battery, but cites to Gupta at col. 3, lines 65-68 as curing this deficiency.

It would not have been obvious to modify Fussey by Gupta because Fussey and Gupta are directed to different forms of billing information not relevant to each other. Fussey discloses optimization of the cost of driving a vehicle based on a cost function. Fussey discloses that the cost function can depend on fuel consumption and efficiency of power units (paragraph [0030]). Fussey discloses that whether the electric motor 14 is used or not is based on the fuel consumption and emissions saved in motor assist and the fuel consumption and emissions that would result from generating electricity (paragraph [0038]). These costs are estimated instantaneously (paragraph [0039]). In contrast, Gupta discloses that if a user recharges a battery, this information is used when the battery supplier bills and accounts for the usage of the battery (col. 3, lines 62-68). Gupta does not disclose or render obvious that information indicating the user has recharged the battery is used in determining an energy cost of the battery and further does not disclose that such information is used for optimizing the operating costs of

a moving vehicle. Instead, Gupta uses the charge and discharge histories of the battery to calculate either (1) a basic business fee for the use of the battery (such as a rental-related fee), or (2) a fee that accounts for maintenance/replacement of the battery.

Because a rental fee and/or replacement fee associated with the battery is not relevant or useful for minimizing a cost function for driving a vehicle, it would not have been obvious to modify Fussey by Gupta. Thus, one of ordinary skill in the art, taking the references as a whole, would have had no reason to modify Fussey by Gupta.

Even if the applied references are combined as proposed, they fail to result in the independent claim 27 features of: (1) "storing, by the power supply control device, a cost of generation for each unit of charge stored in the battery"; (2) "information further including information on an energy cost of the onboard battery based on charge and discharge histories of the onboard battery, the charge and discharge histories of the onboard battery including, for each unit of charge stored in the battery, the generation cost of the unit of charge"; (3) "determining a current cost of the battery from the costs of generation corresponding to the units of charge stored in the battery"; (4) "calculating, by the power supply control device, a quota for power distribution for each of the power sources and the battery from the power generation costs of the power sources and the current cost of the battery"; (5) "wherein the adjusting is based on the information and performed by prioritizing a power supply from one of the plurality of power sources which has a lowest power generation cost of the plurality of power sources".

Even if Fussey is modified by Gupta, the proposed combination fails to result in features (1) and (3) quoted above because neither Fussey nor Gupta discloses storing the costs of generation for each of a plurality of units of charge stored in a battery.

Even if Fussey is modified by Gupta, the proposed combination fails to result in feature (2) quoted above because the proposed combination would be Fussey's system, modified to bill users for recharging the battery as disclosed by Gupta. That is, the references taken as a whole

provide no reason to base a cost function for determining a power distribution for a moving vehicle on information indicating a charge history used in Gupta to determine a rental/replacement fee. Even if Fussey is modified by Gupta, the proposed combination fails to result in feature (4) quoted above because Fussey is directed to determining whether to power a vehicle by internal combustion engine 20 or electric motor 14 (see paragraphs [0038]-[0039]). Thus, Fussey does not disclose determining quotas for each of a plurality of power sources as claimed.

Even if Fussey is modified by Gupta, the proposed combination fails to result in feature (5) quoted above because Fussey does not disclose that the power supply having the "lowest power generation cost" is selected to power the vehicle. Instead, Fussey discloses that the cost function includes parameters such as exhaust emissions, topographical influence, whether the environment is urban, etc. (paragraphs [0010], [0030] and [0037]-[0038]). Fussey clearly states that the cost function can require that higher consumption costs may result from the desired power distribution regime, for example, if emissions standards require it (paragraph [0010]). Thus, Fussey does not require that the adjusting results in the power supply having the lowest power generation cost being prioritized.

For the foregoing reasons, Applicants request withdrawal of the rejections.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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